

AMENDMENTS TO THE SPECIFICATION

Please amend the specification, as follows:

Replace paragraph [0036] with the following amended paragraph [0036]:

FFT unit 302 operates upon the received MCM signal r_k that is obtained from guard unit 230 and outputs the frequency domain version \mathbf{R} . The output \mathbf{R} of FFT unit 302 is a series of data and pilot symbol values for each symbol encoded on the received MCM signal r_k . Relative to Equation No. 2, the output \mathbf{R} can be represented in the frequency-domain by the following equation

$$\mathbf{R} = \mathbf{H} \bullet \mathbf{S} + \mathbf{N} + \mathbf{U} \quad (3)$$

where:

\mathbf{H} is the discrete Fourier transform (DFT) of the channel's impulse response;

\mathbf{S} is the DFT of the transmitted MCM signal;

\mathbf{N} is the DFT of the additive white Gaussian noise (AWGN) (also known as background noise) term;

\mathbf{U} is the DFT of the impulse noise term;

• denotes matrix (element-by-element) multiplication such that, for $\mathbf{S} = \{\underline{[S_0, S_1]} \underline{S_0}, \underline{S_1}, \dots\}$ and $\mathbf{H} = \{\underline{[H_0, H_1]} \underline{H_0}, \underline{H_1}, \dots\}$, $\mathbf{S} \bullet \mathbf{H} = \{S_0H_0, S_1H_1, \dots\}$; and

the **bold style** and UPPERCASE letters indicates **VECTOR NOTATION** in the frequency domain. $[\cdot]$

Replace paragraph [0075] with the following amended paragraph [0075]:

Total-noise measuring unit 908 produces a time-domain estimate of the total noise (\hat{d}) and includes a demapping and pilot-insertion unit 314; a multiplier 919; IFFT unit [[332]] 322; and an adder 917. Impulse-noise estimating unit 911 produces a time-domain estimate of impulse noise content \hat{u} [[()]] and includes [[::]] peaks-detection unit 326. Compensated-signal generator 913 produces frequency-domain equalized and compensated signal $R^{(eq\&comp)}$ and includes: an adder 939; an FFT unit 929; optional delay unit 330; inversion unit 332; and a multiplier 935.